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ABSTRACT

The seven presentations in this collection explore the directions technology is taking, its importance to teaching and learning, and the role of two-year college trustees in realizing technology's contribution to student success. First, Norman Locksley provides a "Welcome and Overview." Next, "Technology Today: Direction for 2001," by Bob Vogt, discusses the present status and future directions of mainframe and personal computer technology; networking in the classroom, college-wide, and with other networks nationally and internationally; and the impact of educational technologies on traditional structures. In the next section, "Teaching/Learning, Today and Tomorrow," Geneva Waddell addresses the perceptions of students, teachers, and administrators about the teaching and learning changes that will take place as a result of technology, focussing on instructional technology, teacher/learner roles, and student success. Next, "Trustees," by Norman Locksley, advises trustees to set up local area networks and get computer power into the classrooms and the hands of students. The next section, "Impact and Change," by Robert Parilla, highlights some of the ways computers are being used at Montgomery College in Maryland. Next, "How To Manage Your Board's Data Flow," by Norman Locksley, discusses report development procedures used by Montgomery College trustees. Finally, "Multimedia and Video Discs: Some Studies of Interest," by Geneva Waddell, reviews studies on the outcomes of instructional technology use. (PAA)

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Technology Teaching & Trustees in 2001

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Leadership 2000
Washington, DC
Grand Hyatt
July 20, 1993

Dr. Norman Locksley, Board of Trustees
Montgomery College, Montgomery County Maryland

Dr. Robert Parilla, President, Montgomery College

Mr. Bob Vogt, IBM Corporation, Washington, DC

Dr. Geneva Waddell, Adjunct Professor
Montgomery College

Mr. Bill Campbell, Director of Planning and Institutional Research, Montgomery College

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Welcome and Overview--Dr. Norman Locksley
Immediate Past Chair, Montgomery College Board of Trustees

Welcome to this FORUM on TECHNOLOGY, TEACHING AND TRUSTEES in 2001. I'm Norman Locksley, Immediate Past Chair of the Board of Trustees at MONTGOMERY COMMUNITY COLLEGE in nearby MONTGOMERY COUNTY MARYLAND.

With help from Bob Vogt and the IBM Corporation, today we want to explore the directions technology is taking, its importance to teaching and learning, what trustees can do, and the impact and changes which are needed if we are to realize our vision of technology's contribution to student success.

First, allow me to introduce our panel--Bob Vogt, most of you know, is a community college consultant with the IBM Corporation here in Washington; Geneva Waddell, an Adjunct Professor at Montgomery College; Bob Parilla, President of Montgomery College; and Bill Campbell, Director of Planning and Institutional Research at Montgomery College.

Most of us in community colleges must now rethink where we have been and where we are going. For example, COMMUNITY COLLEGE STUDENTS MUST HAVE ACCESS TO PC's -- NOT IN A SPECIAL LAB -- NOT JUST IN THE CLASSROOM -- BUT AT HOME ALSO -- YES, THEIR OWN COMPUTER--JUST AS COMMON AS A TEXTBOOK.

Indeed, we must change the way we do business! At Montgomery College, which, as most of you know is a comprehensive, multi-campus, community college in the Maryland suburbs of Washington, D. C., we have found that REVITALIZATION is the best way to implement essential changes.

High school graduates do not have the skills that business and industry require. Among them are skills that can be taught, reinforced and evaluated by trained instructors using high-powered multi-media software.

A recent report from the Office of Technology Assessment says:

> We have an urgent need to provide eight hours of computer time per student week.....combined with in-service faculty training and major curricula changes.

What happens when we lack these skills? Between 1980 and 1988, U.S. consumption increased 10.2%. OVER THE SAME PERIOD, FOREIGNERS OWED AMERICANS $1,000 PER EACH U.S. WORKER AT THE START; but by 1988, AMERICANS OWED $5,000 PER EACH FOREIGN WORKER.

...POLITICS IS STILL LOCAL, BUT ECONOMICS HAS GONE GLOBAL.

Let's look at some of the FORCES OF CHANGE since these are the driving requirements for technological advance.

FORCES OF CHANGE

Begin first clip "What are the PREDOMINANT FORCES OF CHANGE"
End clip ...."how we use them." (about 6 minutes)

Dip to black (4 seconds)

Begin second clip "Faculty workload....building explosion"
End ...a competitive environment." (30 sec)

Dip to black (4 seconds)

Begin third clip "We hear about productivity...
End third clip ....quality of education we deliver (1 min.)

Dip to black (4 seconds)

3

WHAT IS OUR PRODUCT?

Begin fourth clip "This is our product... (2 min.)
End fourth clip ..."Our middle class has been slipping."

Dip to black (4 seconds)

HIGHER EDUCATION "A Cottage Industry" (Title only)

Dip to black (4 seconds)

NEW CLIPS (ABOUT 1 MINUTE)

(1) 1883 math class
(2) 1993 math class

As shown in these clips...EDUCATION is perhaps the only industry where a professor from 100 years ago could still feel at home in the classroom --LECTURE, BLACKBOARD, TALK. So we ask ourselves.....

HOW WILL COMMUNITY COLLEGES CHANGE BETWEEN NOW AND 2001?

HOW WILL TECHNOLOGY ASSIST COMMUNITY COLLEGES IN OUR GLOBAL ROLE OF EXPANDING THE "MIDDLE CLASS" SOCIETY?

WE WILL HARNESS TECHNOLOGY TO PRODUCE MORE AND BETTER LEARNING AT LOWER UNIT COST.

You will find a QUESTIONS SHEET in your packet. We would like for you to write your questions, and suggested answers if you have some, on that sheet and we will collect them about 11:50 following the presentations.

I would like to ask Bob Vogt now, to provide some insight into TECHNOLOGY TODAY--DIRECTION FOR THE FUTURE.

Bob Vogt
Industry Consultant, IBM Corporation

Technology Today--Direction for 2001

Thank you Dr. Locksley for inviting me to participate in this session.

The task of describing the technology of today and what direction it will take in the future is a semester-long topic. In the next ten to fifteen minutes I would like to focus attention on three major areas:

- o Computer Technology
- o Networking
- o Structures

The evolving computer technology direction, the accelerating growth in communication or networking, and most important, the impact this changing technology is having and will continue to have on management in the academic and administrative arena in community colleges.

What is the anticipated direction of computer technology? First let's look at PERSONAL COMPUTING.

- o Personal Computer Direction
  - -Power/Speed/Storage
  - -Presentation Tools
  - -Multimedia

This area continues to expand at an accelerated rate. Colleges and students alike continue to allocate scarce resources to take advantage of these tools to become more productive. Vendors are responding to their needs with more power, speed and increased storage--all at lower costs. The technology has wide acceptance and all indicators point to increased usage.

Faculty are moving the technology into the classroom for instructional purposes. A key factor in this movement is the availability of easy to use presentation tools.

Multimedia continues to capture the attention of both faculty and students. Voice, image and data transmission enhances the learning process in most disciplines. Two key factors impact this growth. First is the availability of current hardware and software to support multimedia applications. Secondly, the availability of faculty support structures to enable faculty to develop multimedia applications for instructional purposes.

- o Client Server Direction
  - Distributed Solutions
  - Voice - Data - Image

Colleges continue to accept the client-server philosophy. Open systems architecture to support multi-vendor solutions is gaining wide acceptance.

Distributed systems solutions move the data closer and closer to the end-users--faculty, administrators, and most import, students.

A clear direction encompasses voice-data and image. Image presents the most serious challenge. To date, we can transmit still pictures with minimal difficulty. Motion image requires wider transmission bands not readily available on every campus. Compression research and wide band technology appears to be just around the corner.

Mainframe technology will continue to play a major role on every campus.

Institutional data storage continues to be the primary role for mainframes due to the large investment of dollar and people resources for administrative applications like, admissions, registration, finance and human resources.

- o Mainframes
  - Institutional Data
  - Network Server
  - Data Integrity/Confidentiality

Network Server is an emerging role for mainframe technology. The large storage capacity, available application software and ability to support multiple networks simultaneously provides advantages at a majority of colleges today.

The requirements for data integrity, security and confidentiality continues to be major factors in mainframe decisions.

NETWORKING

- o Classrooms
  - Faculty Presentation Tools
  - Student/Student Interaction
  - Faculty/Student Interaction
- o Campus/College
  - Lan's
  - Fiber Optics
  - Microwave
- o Networks to Networks
  - Departments
  - Campus/College
  - Outside Sources

Campus/Colleges/States/Nations

Networking is the fastest growing segment for technology today. Communication--faculty with faculty, faculty with students, students with students--is receiving high priority in most colleges today.

Classrooms and labs are now networked to utilize applications developed with faculty presentation tools.

Direction is to increase student-to-student interaction and faculty to student interaction using electronic mail, bulletin board and file transfer applications.

Colleges with multiple campuses are linked with local area networks.

Fiber optic networks will continue to expand the network function between campuses in a college.

Microwave, with its speed and wide band capability is a viable alternative for most colleges even though the start-up cost is high.

National networks like Internet are providing cost effective highways to link departments, campus for colleges and colleges to colleges.

The clear direction is communication with networks that link campuses, states, and even nations. Most of this activity is available with minimal expense to the colleges. Students, with computers of their own are taking advantage of these outside network resources on their own at colleges which lag behind this implementation of networks.

The changing technology and the accelerated acceptance of its value as a tool to manage the instructional process is impacting our traditional structures.

STRUCTURES

o Access to Information
  - Administration
  - Faculty
  - Students

The demand, at all levels, for access to information to address responsibilities for management, instruction and learning is prevalent. A clear direction for the next century is to provide ready access to information for administrators, faculty and students.

o Accessibility
  - On/Off Campus Kiosks
  - Home/Work
  - Time Independent

Today, more and more colleges, are providing accessibility--using computer technology and networks through kiosks--on and off campus.

Education and knowledge will not have a special time requirement. The concept of distance education is attracting more and more believers each year.

o Learner-centered Focus

Those colleges moving towards a learner-centered focus are having to re-evaluate present techniques for doing

-Assessment and Placement
-Course Delivery and
-Evaluation and Tracking

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o Impact on Today's

Technology, today and tomorrow, will have a major impact on the colleges'

- Administrative Applications
- Curricula
- Decision-making Process, and
- Institutional Planning

And now, Geneva Waddell from Montgomery College will focus on TEACHING AND LEARNING--Today and Tomorrow.

Geneva Waddell, Adjunct Professor
Montgomery College

TEACHING--LEARNING TODAY & TOMORROW

While preparing for this forum I asked a group of people (students, faculty and administrators) what they think about TEACHING/LEARNING and TECHNOLOGY and THE CHANGES THAT WILL TAKE PLACE IN THE NEXT EIGHT YEARS.

I can share SOME of their comments with you.

- Students, with much excitement, told me...
  (Natl Gallery of Art on Laser Disc)
  (Virtual Reality--Interior Design)
  (TV/CC Registration)
- Faculty, with a dreamy look, told me...
  (National Demonstration Lab)
  (Foundation Center)
- Administrators, with a "too busy" stance, told me ..
  (Increasing productivity)
  (Costs)

Incidentally, what I learned mostly in this process, is that when I ask people what they think about technology and teaching/learning, I need time to LISTEN.

As I did listen to their comments, I noticed that most of them fell into four key areas:

- Instructional Technology
- Teacher/Learner Role Change
- Student Success (and a general category I call)
- Opportunities and Challenges

Included in the instructional technology group, students shared their excitement about the potential of:

- Compact Discs
- High Definition TV
- Laser Discs and interactive video

And there was the student from the National Institute of Standards and Technology who shared this CONCERN about the Bulletin Board Service... (example... proposal...Washington)

When asked about the need for computers in the classroom, most students were excited about the potential this could bring. Here's a clip (in slow motion without sound) which illustrates one way we are using technology in the classroom now.

CLIP 1 Math Class

Faculty, too, shared their dreams of the teaching/learning potential using today's technology. Here's a video clip which explains.

Clip 2 Start..... Give us your perspective
End .....finally get math.

Think about the potential here for at-risk students.

Moving to a question about teacher/learner ROLE CHANGE, I heard this:

- o Client/Consultant/Mentor/Coach
- o Front to Side
- o Student led projects\teacher sponsor

Believing that technology today, and tomorrow, can play a major role in STUDENT SUCCESS, I, then, searched for data that would support, for example, my sense that multimedia and interactive video will contribute to the teaching/learning process and consequently to student success in significant ways. A summary of the findings are included in the disk that is in your packet.

The studies support the notion that learning retention is a key consideration for the use of interactive videodisc technology in education and training. The capability of ready access to full-motion video and sound allows instructors to increase the motivational and emotional appeal of the courseware to students and this, in turn, has a dramatic impact on the student's ability to retain information.

In summary, the studies lend support to notions of:

- o Increased Retention
- o Time Savings (for faculty and students)
- o Cost Savings
- o Other Outcomes (such as student achievement)

For example: A study by Riverside Community College of use of an interactive videodisc Introductory Biology course and its impact on retention showed that the proportion of students who received A's increased by 12%; the number receiving B's increased by 11%; students who received D's DECREASED 6% as did the proportion of students who withdrew.

Many researchers studying interactive videodisc technology in higher education refer to illustrations of increased achievement and student success. For example, David Kearsley, at George Washington University, suggests that increases in achievement count for more in academic settings than do other advantages, such as time and cost savings, unlike in most businesses.

At Montgomery College, a student success model is being developed and student success plays a major part in strategic directions we are taking. This next clip highlights how a success model such as this one can be helpful.

Clip 3 Start.... I would like...
End..... let our teachers teach.

For more information about the student success model refer to the disk in your packet.

Moving now into the categories, which I call "opportunities and challenges," here are some of the words I heard:

OPPORTUNITIES

- Basic knowledge level (better known as remedial)
- Faculty development (faculty ID as key to technology)
- Alternative methods--time/salary (based on results)
- Partnerships (refer to sources on disk)
  (list of funding sources and associations)
  (T.H.E. article)

CHALLENGES

- Student motivation
- Evaluating learning progress
- Costs
  - Costs of NOT using technology
  - Costs of passive vs. active learning
  - Productivity gains
- Access
  - Learning anywhere and everywhere
  - Computers at home
  - Bulletin Board Service

And, finally, here are some questions that were raised:

- How can we enhance learning and BUILD IN student success?

- How can students be better prepared to get better jobs using rapidly changing technology?

- How can technology help us reduce the cost per student and enhance the quality of learning.

and, most importantly,

- How can we prepare faculty and students to embrace change in using technology to insure student success?

Now Dr. Locksley will share his thoughts about WHAT TRUSTEES CAN DO to facilitate the use of technology in community colleges.

TRUSTEES
Dr. Norman Locksley
Trustee, Montgomery College

WHAT can Trustees do? Trustees can:

- o HAVE THEIR OWN Local Area Networks
- o GET COMPUTING POWER IN CLASSROOMS
- o GET COMPUTING POWER IN THE HANDS OF STUDENTS

HOW? Make TECHNOLOGY a vital part of each campus via a Director, Dean, Vice President and others.

CAPITAL IMPROVEMENT BUDGET -- 5-year life cycle
Pass on old equipment, install new.

INVEST IN NEW EQUIPMENT BASED ON DETAILED GOALS SPELLING OUT

HOW PRODUCTIVITY GAINS WILL BE ACHIEVED:

- o Distance Learning
- o Modular courses
- o Learning and Productivity Evaluation

USING COMPUTER POWER, EVERYBODY TEACHES--

President, administrators, YES, Trustees act as change agents for other Trustees in other colleges through their participation in ACCT groups--our own distance learning.

We, as trustees, can also use technology to improve decision making by requesting information in a manageable form.

For example, here's a clip that explains:

Clip 4 Start: REP: Dr. Locksley, I believe...
End: ...Before they actually take place.

A reprint from an article on "How to Manage Your Board's Data Flow" (that first appeared in the July/August issue of The Journal the Association of Governing Boards of Colleges and Universities) which describes this Trustee Information Program is on the disk in your packet should you wish to review it.

Dr. Robert Parilla, President of Montgomery College, will now share some thoughts about impact and change. Bob...

Dr. Robert Parilla
President of Montgomery College

Impact and Change

Yes, technology is changing the education business in significant ways. For example, at Montgomery College, it is changing the way students register, the way in which we advise students, their classroom experiences, and the way they communicate with faculty. It is changing the way classrooms look and sound, how faculty teach, and how students learn.

Our basic business is student success. I believe that if we insure that our students learn English and math skills, they can and will succeed academically. Technology, as faculty keep telling us, is helping us to teach students on an individual basis in the classroom setting. This will be particularly helpful in teaching basic developmental skills to our most at-risk students.

Last month, at Montgomery College, we invited a group of people (which included trustees, legislators, faculty and students) to the College to focus on the impact of technology on education. This group included those who will be making the decisions which will shape policy and allocation of resources for the future. Earlier you saw some clips from that visit. Here are a few more I would like to share with you:

Clip 5 Start: Today we had the opportunity....
End ....for teaching and for learning.

Fade to black after each (4 sec.)

Clip 6 Start ...Mr. Gildea, when President Clinton....
End ...workforce of the next century.

16 (Dr. Parilla continued)

Clip 7 Start ...Mr. Lehman.....
End ...and greatest effort.

These clips represent just one of our many efforts at Montgomery to involve the community in our focus on the impact and change needed.

AS LEADERS, what questions should we be asking?

ARE WE PREPARED? HOW CAN WE PREPARE TO EMBRACE CHANGE?

WHAT SHOULD WE BE PLANNING?

HOW WILL WE PAY FOR UP-TO-DATE TECHNOLOGY?

Do we have answers to these questions?

Start collecting questions sheets

Dr. Locksley

What questions or suggestions do you have for us?

Thank you

Student Success Model

Student success and satisfaction are the ultimate measures of institutional effectiveness.

Student Success Credo

- Student success at MC is achieved when students meet their educational goals and are satisfied with their MC experience.
- The probability of student success will be increased when:
  - Students have become self-confident, independent, and interdependent learners.
    - Who can read, write and speak at college level
    - Who can use math tools and concepts at college level
    - Who can use developing information technology to support continued learning
    - Who are tolerant and flexible and recognize interdependence of modern societies
  - Students have clear educational, career and personal goals
- We enable student success through:
  - Taking a personal interest in each of our students
  - Assessing student aptitude, ability, achievements and goals
  - Counseling and advising students to be focused and realistic
  - Placing students in appropriate courses
  - Instructing students through challenging but nurturing and encouraging teaching methods
  - Providing instructional and learning support programs
  - Having personal performance expectations which reflect student success, personal commitment and revitalization values as first priorities.

Sources and Resources

The Institute for Academic Technology
P. O. Box 12017
Research Triangle Park, NC 27709-2017
(919) 560-5031
Fax (919) 560-5047

The Foundation Center
1001 Connecticut Avenue, NW
Washington, D. C. 20036
(202) 331 1400

The Foundation Center
79 Fifth Avenue, Dept. MC
New York, NY 10003

National Demonstration Laboratory
For Interactive Information Technologies
Jacqueline Hess, Director
Madison Building
Library of Congress
Washington, DC 20540
(202) 707 4158

G W Associates
Educational Consulting
P. O. Box 10196
Rockville, Maryland 20849-0196
(301) 805 2898

Multimedia Associations

AECT
Association for Educational Communications and TEchnology
1025 Vermont Avenue, NW, Suite 820
Washington, D. C. 20005
(202) 347 7839

AIIM
Association for Inforamtion and Image Management
1100 Wayne Avenue, Suite 1100
Silver Spring, MD 20910
(301) 587 8202

HOW TO MANAGE YOUR BOARD'S DATA FLOW

by Dr. Norman Locksley

Norman Locksley is Chairman of the Board of Montgomery College in Rockville, Maryland.

Reprint from THE JOURNAL OF THE ASSOCIATION OF GOVERNING BOARDS OF UNIVERSITIES AND COLLEGES, VOL. 33, No. 4 July/August 1991 AGB REPORTS, pp. 22-25.

It takes solid information to produce a sound decision. A joint trustee-administration committee at Montgomery College in Rockville, Md., has worked out a process to convert a flood of data into an orderly, effective decision support system.

When President Dunster established the first lay governing board in America at Harvard College in 1642, how did this doughty colonial trustees receive the information they needed to make their decisions? Although details are hard to come by, it would appear that they used procedures that have a familiar resonance to a modern trustee. Several days before a board meeting, a mounted messenger delivered documents to each member's home. When the board convened, the president reported on the topics listed in the agenda. And we can be sure these board members responded with questions and concerns--perhaps among them, "Methinks the firewood expenditure for autumn much greater than last year."

Fast-forward your time machine a little less than 350 years to land in the information society--from quill pens to laser printers, sailing vessels to space shuttles, barber surgeons to organ-transplant specialists. Hardly anything has been left unchanged in the physical world or our mental cosmos since that first board met.

How about the information protocol for board meetings? Well, the documents now arrive from a man in a van, produced by computer and printer rather than quill pen and scrivener. At the board meetings, the president and staff provide information, and board members raise questions.

Has the process withstood the changes of time because the method responds to an unchanging aspect of human nature? Or could it be that we are using new technology to do the same things we did before? Are we simply generating more data, faster than ever, because that's what we've always done?

MANAGING BETTER

Look at my institution, Montgomery College in Rockville, Maryland: By Maryland law, our eight member board of trustees must exercise general control: over three campuses within a 500-square-mile area just north of Washington, D. C. The college also has 40 other off-campus centers and serves a population of about 750,000. Our budget is about $70 million. We have about 30,000 students and nearly 2,000 staff and faculty.

Not bad for any enterprise. If we were a business with 30,000 customers and 2,000 employees with corresponding facilities and budget, our impact would be impressive. Not in the Fortune 500, of course, but definitely a large slice of the local scene. Further, if we were a business, the board of directors would likely enjoy a state of the art reporting system. Highlighted balance sheets, graphs, simulation models, and trend-lines all over the place are a way of life in any board room for a prospering firm. Boards of trustees are not boards of directors, of course. But both kinds of boards need meaningful, timely, well-organized information, presented to highlight vital facts and reduce unnecessary prose.

After ample discussion of what information trustees really need, our board authorized a pilot project to develop the modestly titled Trustee Information Program (TIP). An AGB publication, STRATEGIC DECISION MAKING, provided helpful input. In its categorization of information, we found a useful guide for our locally oriented program. We formed an ad hoc trustee committee, whose four members met with the chief administrative officer and the director of planning and institutional research, along with coordinators for the subject areas, to choose report topics for the pilot project.

The joint trustee-administration committee agreed that a gradual approach might be less daunting. For our first cut, we chose enrollment, financial affairs, and human resources as the topics to track. Why these? Familiarity, mostly. The board already was receiving data on these topics on a well-established schedule, so we decided that this introduction would ease the transition to a full-blown Trustee Information Program.

What should our reports look like? To answer this question, we built on previous practice. Our standard monthly information packet includes the president's report, with selected charts, graphs, and anecdotal information attached to it. We decided to continue the routine, while adding Trustee Information Program reports.

The ten-topic structure of STRATEGIC DECISION MAKING suggests many options for specific reports. Take enrollment, for example. The book describes key trends and indicators in detail-

45 of them under this single area. They range from "enrollments by gender, ethnic background, age, income and geographical distribution" through "market studies demonstrating need for new programs and emphases" to "projected mix of students based on various tuition levels."

Rather than jump into this pile of analytic data, we started small. Our approach resembles a kitchen remodeling project, say, as opposed to building a new house. By forging this process jointly between trustees and administrators, we hoped to cook up a tastier and more nutritious information flow. We created a development plan, which included provision for continuing evaluation, feedback, and modification for our program. No one-shot reports are included in our plan; we regard a continuing flow of organized information as analogous to the flow of blood in a living organism.

The product of all this heavy breathing turned out to be low-tech indeed. Someday we'll use 3-D computer printouts and laser holograms in designer colors; for now, the familiar loose-leaf binder will suffice. With dividers and quick-finder labels for the categories of information we cover, each board member has a handy place to put the TIP reports and, more important, a user-friendly reference asking to be used. This product, developed early, has enabled everybody to visualize where the pilot project is headed.

The following five-step procedure outlines how we develop the reports:

1. Our ad hoc trustee committee develops specific guidelines for each category of report.
2. The committee discusses and agrees to the guidelines after meeting with the chief administrative officer and designated staff.
3. Draft reports, after clearance by the chief administrative officer, go to the chair of the TIP Pilot Project Committee, who collects comments from the board.
4. Comments and modifications are incorporated into the next edition of the reports, usually after some discussion and further modification.
5. Revised reports are reviewed by the president and sent to the board with the president's monthly report.

Other guidelines include a number of reminders to focus, supplement, and clarify long reports. Numerical information, we remind administrators, is best presented in chart format, because good graphics promote understanding and highlight trends. Tables, bar graphs, pie charts--all of these promote effective communication.

Again, we did not attempt to fold all reporting into the Trustee Information Program. Our committee and the board see the TIP as a simplifying and cooperative task that will lead to fewer and better reports--but not tomorrow or even next week.

PRODUCT DEVELOPMENT

To see how this "develop-evaluate-revise" process works with our board, here is how we developed our enrollment report.

1. Items for the enrollment report include, for example, comparisons by campus of credit hours for part-time and full-time students, males and females. Our ad hoc committee picked these and other data from previous reports, suggestions from other board members and our director for institutional research, and the menu from STRATEGIC DECISION MAKING. We winnowed them to a manageable group of five specific reports, presented graphically in seven pages of data.

2. At our committee discussions, staff members tended to emphasize the time and effort necessary to compile the data, while board members often were interested in potential payoff. That is, board members are interested in comparing projections and actual results only when significant differences are apparent. For example, Montgomery County has been changing so rapidly in the last few years that board representatives thought three years were enough to determine a trend line; administrators favored five. We compromised on the goals for the initial effort, and accepted pretty much what we had been getting.

3. Next, we looked at the draft reports from the staff and made some suggestions, mostly replacing text with graphics to the extent possible. Over all, we tried to avoid meddling with details and stick to policy governance, our traditional purview. This was a little difficult when our instructions were, "Well, be direct and only pick out the important facts," or "I'm sure you can boil this (this being 15 single spaced pages) down to one-page chart with clarifying remarks." Then we used a short checklist to collect comments from board members on the utility of each report.

4. On our checklist scale of one to five, our first enrollment report measured one. To many committee members, the graph was too ambitious or complex and, as a result, too confusing. Some topics were dropped and others substituted.

5. The director of institutional research collects the reports for the president's review and possible inclusion in the monthly report to the full board.

6. The cycle continues as long as necessary. Periodic comments from board members feed in to the process and an add-drop preference option keeps the list of reports from becoming stale or intimidating by sheer bulk.

Early in our review-and-revise efforts, two factors emerged as important and helpful to college staff and trustee committee members. First, rather than accepting routine graphic presentations of data, we required staff to present some analysis in the heading of the chart itself. Second, staff realized that board members' time and attention are at a premium. We must be attracted by the format, topic, and means of presentation. They now understand that a little attention to communication technique pays off.

To reduce the volume of reports, the board must continue to emphasize analysis--"This is all very nice, but what does it mean?" As management guru Peter Drucker put it in THE COMING OF THE NEW ORGANIZATION, "As advanced technology becomes more and more prevalent, we have to engage in analysis and diagnosis...even more intensively or risk being swamped by the data we generate."

LOOKING at 2001

In less than a decade, the next millennium will arrive. By that time, the wonders of the microchip will have reduced many tasks to a routine process. Will trustees be swamped with more and more demands to wade through printouts, or will an orderly process for introducing new information take hold?

The goal of the TIP remains unchanged. Our mission statement reads: "The Montgomery College TIP is a systematic procedure to refine and strengthen the flow of information between the college president and the board of trustees." This goal will easily extend into the year 2001, as the information between the college president and the board of trustees." This goal will easily extend into the year 2001, as the information our board requires continues to broaden.

Even though information can flow accurately and graphically to your board, there is no substitute for good judgment. With a solid base of information, clearly presented, your board and mine should have a much better picture of the organization, as well as the ability to consider the effects of alternative courses of action. By starting now, we can begin to curb the torrent of data in favor of an orderly flow of trustee information, avoiding the problem described by R.S. Wurman, "Everyone spoke of an information overload, but what there was in fact was a non-information overload."

SOME STUDIES OF INTEREST
By Geneva Waddell

Multimedia and Video Discs

INCREASED RETENTION

Neff (1987) found an increased retention rate of 80 percent, in a study of interactive videodisc programs used for training at Massachusetts Mutual Life Insurance Company.

Kearsley (1989) found GTE's use of interactive videodisc courseware to train network technicians was superior to a lecture-based curriculum in terms of retention,

Shipe, Cheek and Haskell (1988) found performance retention, after initial instruction, to be 20-40% greater than traditional instruction.

TIME SAVINGS

In a comparison of forty undergraduate students learning sign language, Slike and others (1989) discovered that the mean number of minutes spent by the students learning signs through interactive videodisc instruction was one-third less (66 minutes) than those learning through in-class instruction (90 minutes).

In considering student and instructor time costs only, Aukerman (1986) found a cost ratio of 0.61 for interactive videodisc instruction over traditional lecture-based instruction.

(The cost per learner for 2.6 hours of interactive videodisc instruction was $28.61 versus $46.49 per learner in the traditional classroom setting.)

(Cost of INSTRUCTOR time was the biggest factor difference. Instructor time required for the 2.6 HOURS of lecture/discussion averaged 66 minutes while instructor time required for the interactive videodisc courseware averaged 8.5 MINUTES.)

More importantly, perhaps, many researchers studying interactive videodisc technology in higher education refer to illustrations of increased achievement and student success.

OTHER OUTCOMES

For example, Kearsley (1989) noted that increases in achievement counts for more in academic settings than do other advantages, such as time and cost savings.

Shipe, Cheek and Haskell (1988) maintain that mastery test scores for those learning through interactive means are 33% to 70% higher than the individuals who use traditional curriculum and technology.

Fletcher (1990) found fourteen studies that compared interactive videodisc instruction to conventional methods. The aggregate of these studies showed a significant increase in achievement scores. For example, (using pooled standard deviations of 0.69 standard deviations, there was found to be an increase from the 50th percentile students to nearly the 75th percentile of achievement).

A study of Bell South System trainees demonstrates an example of similar information explained in less technical terms. (Before implementation of the Bell South Training System, interactive videodisc based, 75.8% of the trainees mastered the sales training material with 25% scoring higher than the rating of "3" on a 5-point sales effectiveness scale. The use of interactive videodisc training programs raised student mastery to 99%, an improvement of 30.5%, with 100% of the trainees scoring higher than "3", an improvement of 300%. (Martin and Collins, 1991)

Leonard (1992) reported that first-year chemistry students, using interactive videodisc simulations to supplement laboratory activities, outperformed students who only used traditional experimentation techniques on both laboratory reports and quizzes.

A two-year study at Boston University showed that students who used interactive videodisc simulations had higher scores on their emergency medicine exams and reported greater confidence in their treatment abilities (Discover, 1991).

A study by Riverside Community College of the use of an interactive videodisc Introductory Biology course and its impact on retention showed that the proportion of students who received A's went from 6% to 18% after implementation of the interactive videodisc course. B's increased from 20% to 31% following implementation and students who received D's DECREASED from 10% prior to 4% following as did the proportion of students who withdrew (Huang and Aloi, 1991).

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TECHNOLOGY, TEACHING AND TRUSTEES
July 20, 1993

QUESTIONS ANSWERS

1. How will community colleges change between now and 2001?
2. How will technology assist community colleges in our global role of expanding the "middle class" society?
3. How can we enhance learning and BUILD IN student success?
4. How can students be better prepared to get better jobs using rapidly changing technology?
5. How can technology help us reduce the cost per student and enhance the quality of learning?
6. How can we prepare faculty and students to embrace change in using technology to ensure student success?
7. What resources are there available for setting up faculty support centers for faculty development?
8. How will productivity gains be achieved?
9. What can trustees do?
10. Are we prepared? How can we prepare to embrace change?
11. How will we pay for up-to-date technology?
12. What should we be planning?

YOUR QUESTIONS:

Name:_____ Phone #_____
(Optional)